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NEW SOVIET DIESEL CUTTER TO TRANSPORT MILK

The new diesel cutter MT-111 was built as the first of a series to be employed as milk carriers on Soviet rivers.

The ship, which has an all-welded steel hull with a semirecessed superstructure, has the following over-all dimensions: length, 27.85 meters, beam, 4.8 meters, depth, 5.09 meters [evidently the distance from the keel to the first complete deck, which is located above the milk tanks in this vessel], and freeboard height, 1.4 meters. The displacement tonnage unloaded is 41 tons; loaded (with 20 tons of milk), it is 61 tons. When fully loaded, the ship has a draft of one meter and a speed of 17.5 kilometers per hour.

The MT-111 is manned by a crew of six men: a captain, mate, two enginemen, and two seamen.

The ship is equipped as follows [numbers in parentheses refer to the numbers on the appended drawing]:

The forward section of the ship contains a cargo hold (1) and two single-place cabins (2) for the crew. The engine room (3) is amidships, and a second cargo hold (4) is located aft, as well as additional cabins for the crew.

The principal engine-room installations are the 140-horsepower diesel main engine (9) and the 7.[illegible]-kilowatt diesel generator (18). The sea-water tank (17); fuel and oil tanks; fire, sanitary, and drainage pumps; storage battery compartment; distributing panel (24 and 220 volts); tool chest; and work bench are also located in the engine room. A 270-liter boiler heats water for cleaning the milk tanks, pumps, and conduits.

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The diesel generator produces three-phase alternating current, which powers the agitators in the milk tanks, the milk and cleaning water pumps, and the cabin heaters.

The direct-current generator (1,200 watts, 24 volts) is connected to the main engine, powers the lighting system and the signal and control lamps at the fore and aft milk tanks, and is used to start the main engine.

A 150-liter tank is set on the stern section of the superstructure to supply water for the washroom and other installations.

For the transport of milk, the cutter is fitted with two tanks, the forward tank (11) having a capacity of 7 tons and the after tank (12) having a capacity of 13 tons. Two pumps are set in the after hold; one (13) is used for pumping milk, while the other (14) is used for pumping cleaning solutions through the tanks and milk-delivery pipes.

The milk tanks are made of aluminum sheets and are equipped with hatches for cleaning, drainage plugs, agitators with electric motors and reduction gears, thermometers, and inspection holes, Lamps, air nozzles, and a step are also provided for convenience in supervising tank filling. The tank tops have holes 50 millimeters in diameter for loading milk.

The tanks are lined with "mipor" [term derived from microporous rubber], which limits the increase in milk temperature to 4 degrees in 30 hours. The tanks are solidly connected to the hull by foundation plates and straps.

Special hatches have been cut through the superstructure deck for and aft over the tank filling holes in order to accommodate rubber hoses. To assure constant ventilation in the forward and after cargo holds, louver boards have been installed.

The tanks can be loaded in various ways depending on conditions: by gravity flow or by pumps from the milk plant, the tank truck, or the cutter.

For unloading milk, a centrifugal milk pump is used which can deliver 10,000 liters per hour at a pressure of 20 meters of water column. The pump is driven by an electric motor (2.8 kilowatts at 2880 revolutions per minute) and is connected to the tanks by tin-plated copper pipe (15) with a diameter of 50 millimeters. By the cutter's pumps and distributing sleeve on the roof of the after superstructure, either tank or both tanks can be filled or emptied in any combination. In some cases, such as at Moscow's South Port, milk is unloaded using shoreside equipment (suction pumps).

For cleaning and sanitary work aboard the ship, an OTsN-1 centrifugal pump, an 80-liter alkaline-solution tank, a hot-water heater, and a fresh-water tank have been installed. All of this equipment is connected to the OTsN-1 pump, which delivers hot and cold water as well as alkaline solution through pipes and rubber hose to a spray nozzle within the tanks under a pressure of 1.8 atmospheres.

The first MT-111 cutter is delivering milk to Moscow from the milk plants of Didinovo and Lovsty on the Oka River. The voyage takes 23-28 hours depending on the amount of time spent going through the Canal imeni Moskva.

In 1954, 24 cutters of this type will be transporting milk to Moscow along the Oka and Moscow rivers and the Canal imeni Moskva.

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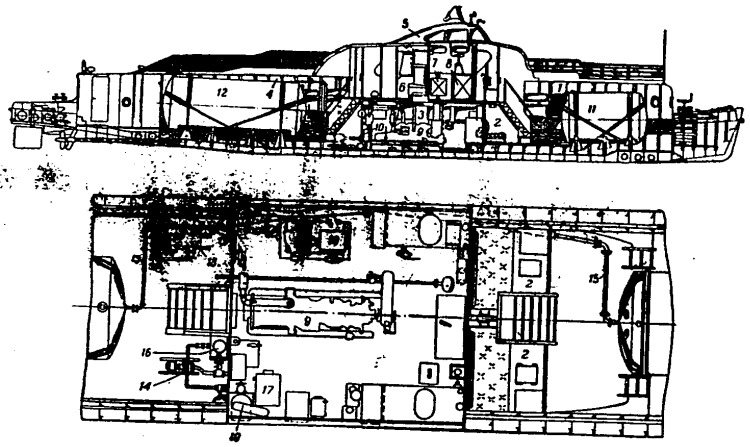
MT-111 DIESEL MILK CARRIER



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